

HAZARDOUS WASTE PERMIT

Permit Number SC7 570 024 466

Issue Date: July 29, 2009

Effective Date: August 29, 2009

Expiration Date: July 29, 2019

Last Modification Effective Date: November 25, 2013

This Permit is hereby issued to:

Owner/Operator: Shaw Air Force Base

Facility Contact: Jenyfer Johnson

Address: SAFB, South Carolina, 29152 Sumter County

Phone: (803) 895-5071

This Permit is for identification and corrective action for solid waste management units (SWMUs) and areas of concern (AOCs) located at Shaw Air Force Base, South Carolina.

This Permit is issued pursuant to Section 44-56-10 et seq. Regulation 61-79 of the 1976 South Carolina Code of Laws, as amended. The authority granted hereunder is subject to the requirements of the aforementioned laws and regulations and the attached conditions.

David Scaturo, P.E., P.G. Director
Division of Waste Management
Bureau of Land and Waste Management

This Permit is the property of the Bureau of Land and Waste Management and must be surrendered on demand. This signature page must be posted at all times in a conspicuous place on the premises.

Table of Permit Modifications

Shaw Air Force Base
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Sumter County

Effective Date	Class	Location	Description of Change
July 6, 2011	III	Appendix A, Table A-7	Modification to the Corrective Action required for AOC F and AOC H
November 25, 2013	III	Appendix A, Table A-7	Revised Remedy Selected for SWMU 2
November 25, 2013	III	Appendix A, Table A-7	Revised Remedy Selected for SWMU 50
November 25, 2013	III	Appendix A, Table A-7	Revised Remedy Selected for SWMU 59
November 25, 2013	III	Appendix A, Table A-7	Revised Remedy Selected for AOC D
November 25, 2013	III	Appendix A, Table A-7	Revised Remedy Selected for AOC K
November 25, 2013	III	Appendix A, Table A-7	Revised Remedy Selected for AOC M
November 25, 2013	III	Appendix A, Table A-7	Remedy Selection for AOC N
November 25, 2013	III	Appendix A, Table A-7	Remedy Selection for AOC O
November 25, 2013	III	Appendix A, Table A-4	Addition of New Site AOC P
November 25, 2013	III	Appendix A, Table A-4	Addition of New Site AOC Q
November 25, 2013	III	Appendix A, Table A-4	Addition of New Site AOC R
November 25, 2013	III	Appendix A, Table A-4	Addition of New Site AOC S
November 25, 2013	III	Appendix A, Table A-1	Addition of New Site AOC T
November 25, 2013	III	Appendix A, Table A-4	Addition of New Site AOC U
November 25, 2013	III	Appendix A, Table A-1	Addition of New Site AOC V
November 25, 2013	III	Appendix A, Table A-7	Changed Wording from Institutional Controls to Land Use Controls

Effective Date	Class	Location	Description of Change
November 25, 2013	III	Removed from Permit	Removed Appendix Table A-8
November 25, 2013	III	Appendix A, Table A-2	Added AOC E to NFA table based on letter dated March 13, 2000
November 25, 2013	III	Appendix A, Table A	Addition of a table that lists all SWMUs and AOCs in the permit
November 25, 2013	III	Appendix A, Table A-7	Changed wording “SWMUs or AOCs” to “SWMUs and AOCs”
November 25, 2013	III	Appendix A, Table A-7	Added “RCR (8/17/2009)” to the <u>Corrective Action Document Selecting LUC</u> Column for SWMU 58
	III	Appendix A, Table A-4	Addition of New Site SWMU 98
	III	Appendix A, Table A-4	Addition of New Site SWMU 99
	III	Appendix A, Table A-5	Addition of New Site SWMU 100
	III	Appendix A, Table A-7	Revised Remedy Selected for AOC L
	III	Appendix A, Table A-2	Remedy Selected for AOC P
	III	Appendix A, Table A-2	Remedy Selected for AOC Q
	III	Appendix A, Table A-2	Remedy Selected for AOC R
	III	Appendix A, Table A-2	Remedy Selected for AOC S
	III	Appendix A, Table A-7	Remedy Selected for AOC T
	III	Appendix A, Table A-2	Remedy Selected for AOC U
	I	Appendix G	Addition of figure showing the permitted facility boundary

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APPENDICIES

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Appendix C - Corrective Measures Study (CMS) Work Plan Outline
Appendix D - Schedule of Compliance
Appendix E - Waste Minimization Certification Objectives
Appendix F - Land Use Control Management Plan
Appendix G - The Facility Boundary Map

APPENDICES

APPENDIX A

SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

Solid Waste Management Unit and Area of Concern numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report.

Table A: Summary list of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)

Table A-1: SWMUs and AOCs Requiring a RCRA Facility Investigation (RFI)

Table A-2: SWMUs and AOCs Requiring No Further Action (NFA) at this time

Table A-3: Permitted Units Clean Closed under RCRA

Table A-4: SWMUs and AOCs Requiring Confirmatory Sampling (CS)

Table A-5: SWMUs and AOCs Regulated under Subtitle I of RCRA

Table A-6: SWMUs and AOCs for which a remedy has been selected but not completed

Table A-7: SWMUs or AOCs that Require Land Use Controls (LUCs)

Table A	
Summary list of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs):	
SWMU No. / AOC Letter	Description of SWMU / AOC
SWMU #1	Waste Water Treatment Plant
SWMU #2	Former Leaking Underground JP-4 Fuel Tank
SWMU #3	JP-4 Fuel/Water Air Stripper
SWMU #'s 4-23	Waste Oil Accumulation Tanks/Drums
SWMU #6	Building 325 Oil Accumulation Tank
SWMU #'s 24-29	Oil Water Separators
SWMU #'s 30 and 31	Building 325 Oil Water Separators
SWMU #'s 32-48	Oil Water Separators
SWMU # 49	JP-4 Spill Area at Rail Siding
SWMU # 50	Fuel Tank Sludge Burial Site
SWMU # 51	Underground Hydrazide Units Waste Holding Tanks
SWMU # 52	Former Landfill No. 1
SWMU # 53	Spent Munitions Carrier (2)
SWMU # 54	Fire Training Area No. 3
SWMU # 55	Former Fire Training Area No. 2
SWMU # 56	Former Land Spreading Sludge Area
SWMU # 57	Pyromizer Incinerator
SWMU # 58	Former Landfill No. 3
SWMU # 59	Former Fire Training Area No. 1
SWMU #'s 60-70	Hazardous Waste Accumulation Areas
SWMU #'s 71-76	Downdraft Paint Spray Booths
SWMU # 77	Wash Water Paint Spray Booth
SWMU # 78	Building 325 Vehicle Maintenance Area

Table A	
Summary list of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs):	
SWMU No. / AOC Letter	Description of SWMU / AOC
SWMU # 79	Battery Neutralization Tank
SWMU # 80	Omniclean/Safety Kleen Units (11)
SWMU # 81	Woodworking Shop Dust Cyclone
SWMU # 82	Building 300 Entomology Shop Wash Drain Area
SWMU # 83	Inert Landfill (4)
SWMU # 84	Former Fire-In Bunker
SWMU # 85	Former Landfill No. 2
SWMU # 86	Former Classified Document Incinerator
SWMU # 87	Former Underground Waste Oil Tanks (2)
SWMU # 88	Former Coal Storage Area
SWMU # 89	Hazardous Waste Storage Building 31
SWMU # 90	Discarded Battery Storage
SWMU # 91	Former Underground Heating Oil Tanks Contamination Area
SWMU # 92	Base EOD Training Area
SWMU # 93	Waste Oil Separator Tank
SWMU # 94	Former Entomology Shops Storm Drains
SWMU # 95	Former and Present Drain Field Areas
SWMU # 96	Building 1602 Oil Water Separator
SWMU # 97	Central Accumulation Point
SWMU # 98	Building 1200
SWMU # 99	Building 1610/1612
SWMU # 100	Building 326

Table A	
Summary list of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs):	
SWMU No. / AOC Letter	Description of SWMU / AOC
AOC 32	Former Waste Pit Near SWMU 59
AOC A	North Ditch Storm Drainage Discharge
AOC B	South Ditch Storm Drainage Discharge
AOC C	Battery Acid Spill Site
AOC D	Lang Syne Investigation
AOC E	Building 337 Spill Site
AOC F	TCE Groundwater Contamination
AOC G	Building 601 - Former Paint Storage
AOC H	Chlorinated Solvent Groundwater Contamination
AOC I	Building 1128 UST
AOC J	Building 205 UST
AOC K	Aeroclub Leaking JP-4 UST
AOC L	Building 706/1200 Oil Water Separator Overflow
AOC M	Building 1613 Leaking Fuel Line
AOC N	Aircraft Parking Apron - North End
AOC O	Shallow Lang Syne Investigation
AOC P	Outdoor Parts Preservation Area- Building 1517
AOC Q	Munitions Storage Area – Concrete UST
AOC R	Heating Oil UST – Building 901
AOC S	Oil/Water Separator – Building 1506
AOC T	Jet Fuel Storage Area – Building 1720
AOC U	Old DRMO Site – Excluding Building 31
AOC V	Soil Contamination After B-1127 Fuel Oil Tank Removal

Table A-1	
SWMUs and AOCs Requiring a RCRA Facility Investigation (RFI):	
SWMU No. / AOC Letter	Description of SWMU / AOC
AOC V	Soil Contamination After B-1127 Fuel Oil Tank Removal

Table A-2	
SWMUs and AOCs Requiring No Further Action (NFA) at this time:	
SWMU No. / AOC Letter	Description of SWMU / AOC
SWMU #1	Waste Water Treatment Plant
SWMU #3	JP-4 Fuel/Water Air Stripper
SWMU #'s 4-23	Waste Oil Accumulation Tanks/Drums
SWMU #6	Building 325 Oil Accumulation Tank
SWMU #'s 24-29	Oil Water Separators
SWMU #'s 30 and 31	Building 325 Oil Water Separators
SWMU #'s 32-48	Oil Water Separators
SWMU # 49	JP-4 Spill Area at Rail Siding
SWMU # 51	Underground Hydrazine Units Waste Holding Tanks
SWMU # 53	Spent Munitions Carrier (2)
SWMU # 54	Fire Training Area No. 3
SWMU # 55	Former Fire Training Area No. 2
SWMU # 56	Former Land Spreading Sludge Area
SWMU # 57	Pyromizer Incinerator
SWMU #'s 60-70	Hazardous Waste Accumulation Areas
SWMU #'s 71-76	Downdraft Paint Spray Booths
SWMU # 77	Wash Water Paint Spray Booth
SWMU # 79	Battery Neutralization Tank
SWMU # 80	Omniclean/Safety Kleen Units (11)

Table A-2 SWMUs and AOCs Requiring No Further Action (NFA) at this time:	
SWMU No. / AOC Letter	Description of SWMU / AOC
SWMU # 81	Woodworking Shop Dust Cyclone
SWMU # 82	Building 300 Entomology Shop Wash Drain Area
SWMU # 83	Inert Landfill (4)
SWMU # 84	Former Fire-In Bunker
SWMU # 86	Former Classified Document Incinerator
SWMU # 88	Former Coal Storage Area
SWMU # 90	Discarded Battery Storage
SWMU # 91	Former Underground Heating Oil Tanks Contamination Area
SWMU # 92	Base EOD Training Area
SWMU # 93	Waste Oil Separator Tank
SWMU # 94	Former Entomology Shops Storm Drains
SWMU # 95	Former and Present Drain Field Areas
AOC A	North Ditch Storm Drainage Discharge
AOC B	South Ditch Storm Drainage Discharge
AOC C	Battery Acid Spill Site
AOC E	Building 337 Spill Site
AOC G	Building 601 - Former Paint Storage
AOC I	Building 1128 UST
AOC J	Building 205 UST
AOC P	Outdoor Parts Preservation Area- Building 1517
AOC Q	Munitions Storage Area – Concrete UST
AOC R	Heating Oil UST – Building 901
AOC S	Oil/Water Separator – Building 1506
AOC U	Old DRMO Site – Excluding Building 31

Table A-3 Permitted Units Clean Closed under RCRA:	
SWMU No. / AOC Letter	Description of SWMU / AOC
SWMU # 89	Hazardous Waste Storage Building 31

Table A-4 SWMUs and AOCs Requiring Confirmatory Sampling (CS):	
SWMU No. / AOC Letter	Description of SWMU / AOC
SWMU # 97	Central Accumulation Point
SWMU # 98	Building 1200
SWMU # 99	Building 1610/1612

Table A-5 SWMUs and AOCs Regulated under Subtitle I of RCRA:	
SWMU No. / AOC Letter	Description of SWMU / AOC
SWMU # 100	Building 326

Table A-6 SWMUs and AOCs for which a remedy has been selected but not completed:	
SWMU No. / AOC Letter	Description of SWMU / AOC
AOC 32	Former Waste Pit Near SWMU 59

Table A-7

SWMUs or AOCs that Require Land Use Controls (LUCs):

All of the remedies below are subject to the conditions stated in the site specific CMS and CMI decision documents as approved by SCDHEC. A change to a corrective action whether in whole or in part must be approved by SCDHEC before implementation.

SWMU No. / AOC Letter	Description of SWMU / AOC	Description of Corrective Action	Description of LUC	Corrective Action Document Selecting LUC
SWMU #2	Former Leaking Underground JP-4 Fuel Tank	Groundwater: - Vacuum Enhanced Pumping with Surfactant Enhanced Aquifer Remediation - In-situ Chemical Oxidation - Long Term Monitoring	- GW Use Restrictions - Land Use Change Notification	(2/18/2009) Revised CMS (4/26/2013)
SWMU # 50	Fuel Tank Sludge Burial Site	Groundwater: - Vacuum Enhanced Pumping with SEAR - In-situ Chemical Oxidation - Long Term Monitoring	- GW Use Restrictions - Land Use Change Notification	(2/18/2009) Revised CMS (4/26/2013)
SWMU # 52	Former Landfill No. 1	Soil: - Cap Stabilization Groundwater: - Long Term Monitoring	- Inspect and Maintain Cap - Maintain Fencing - GW Use Restrictions	RFI (8/21/1995)

Table A-7

SWMUs and AOCs that Require Land Use Controls (LUCs):

All of the remedies below are subject to the conditions stated in the site specific CMS and CMI decision documents as approved by SCDHEC. A change to a corrective action whether in whole or in part must be approved by SCDHEC before implementation.

SWMU No. / AOC Letter	Description of SWMU / AOC	Description of Corrective Action	Description of LUC	Corrective Action Document Selecting LUC
SWMU # 58	Former Landfill No. 3	Soil: - Cap Stabilization Groundwater: - Long Term Monitoring	- Inspect and Maintain Cap - Maintain Fencing - GW Use Restrictions	CMS (2/24/1999) RCR (8/17/2009)
SWMU # 59	Former Fire Training Area No. 1	Groundwater: - Free Product Removal - In-situ Chemical Oxidation - Permeable Reactive Barrier - Long Term Monitoring with MNA Component	- Zoning Restriction - GW Use Restrictions	CMI (11/14/2005) Revised CMS (6/28/2013)
SWMU # 78	Building 325 Vehicle Maintenance Area	Soil: - Removal Action Groundwater: - Long Term Monitoring	- Notification to Property Owners - GW Monitoring - GW Use Restrictions - On-base Land Use Change Notification	CMS (5/19/2009)

Table A-7

SWMUs or AOCs that Require Land Use Controls (LUCs):

All of the remedies below are subject to the conditions stated in the site specific CMS and CMI decision documents as approved by SCDHEC. A change to a corrective action whether in whole or in part must be approved by SCDHEC before implementation.

SWMU No. / AOC Letter	Description of SWMU / AOC	Description of Corrective Action	Description of LUC	Corrective Action Document Selecting LUC
SWMU # 85	Former Landfill No. 2	Soil: - Cap Stabilization Groundwater: - Long Term Monitoring	- Inspect and Maintain Cap - Maintain Fencing - GW Use Restrictions	RFI (5/23/1996)
SWMU # 87	Former Underground Waste Oil Tanks (2)	Groundwater: - Monitored Natural Attenuation	- GW Use Restrictions - Land Use Change Notification	Monitoring Report (8/10/2004)
SWMU # 96	Building 1602 Oil Water Separator	Groundwater: - In-situ Chemical Oxidation - Long Term Monitoring - Monitored Natural Attenuation	- GW Use Restrictions - Land Use Change Notification	CMS/CMIWP (12/21/2006)
AOC D	Lang Syne Investigation	Groundwater: - In-situ Chemical Oxidation - Long Term Monitoring	- GW Use Restrictions	Revised CMS (10/19/2011)

Table A-7

SWMUs or AOCs that Require Land Use Controls (LUCs):

All of the remedies below are subject to the conditions stated in the site specific CMS and CMI decision documents as approved by SCDHEC. A change to a corrective action whether in whole or in part must be approved by SCDHEC before implementation.

SWMU No. / AOC Letter	Description of SWMU / AOC	Description of Corrective Action	Description of LUC	Corrective Action Document Selecting LUC
AOC F	TCE Groundwater Contamination	<p>Groundwater:</p> <ul style="list-style-type: none"> - Extraction and Treatment <p>NOTE: Additional extraction wells will be added as needed to be determined by SCDHEC</p> <ul style="list-style-type: none"> - Long Term Monitoring - An independent review (equivalent to a CERCLA five-year review) of the effectiveness of the remedy every five years beginning in 2011 	<ul style="list-style-type: none"> - Bilateral agreements - GW Use Restrictions 	CMS (9/22/2006)
AOC H	Chlorinated Solvent Groundwater Contamination	<p>Groundwater:</p> <ul style="list-style-type: none"> - In-situ Chemical Oxidation <p>NOTE: Additional "hot spots" treatment as needed to be determined by SCDHEC</p> <ul style="list-style-type: none"> - Extraction and Treatment <p>NOTE: Additional extraction wells will be added as needed to be determined by SCDHEC</p>	<ul style="list-style-type: none"> - Zoning Restriction - GW Use Restrictions 	CMS (6/29/2006)

Table A-7

SWMUs or AOCs that Require Land Use Controls (LUCs):

All of the remedies below are subject to the conditions stated in the site specific CMS and CMI decision documents as approved by SCDHEC. A change to a corrective action whether in whole or in part must be approved by SCDHEC before implementation.

SWMU No. / AOC Letter	Description of SWMU / AOC	Description of Corrective Action	Description of LUC	Corrective Action Document Selecting LUC
AOC H continued		<ul style="list-style-type: none"> - Long Term Monitoring - An independent review (equivalent to a CERCLA five-year review) of the effectiveness of the remedy every five years beginning in 2011 		
AOC K	Aeroclub Leaking JP - 4 UST	Groundwater: <ul style="list-style-type: none"> - Vacuum Enhanced Pumping with Surfactant Enhanced Aquifer Remediation - Long Term Monitoring 	<ul style="list-style-type: none"> - GW Use Restrictions - Land Use Change Notification 	(2/18/2009) Revised CMS (4/26/2013)
AOC L	Building 706/1200 Oil Water Separator Overflow	Groundwater: <ul style="list-style-type: none"> - In-situ Chemical Oxidation - Long Term Monitoring 	<ul style="list-style-type: none"> - GW Use Restrictions - Land Use Change Notification 	(1/29/2009) Statement of Basis (6/18/2014)

Table A-7

SWMUs or AOCs that Require Land Use Controls (LUCs):

All of the remedies below are subject to the conditions stated in the site specific CMS and CMI decision documents as approved by SCDHEC. A change to a corrective action whether in whole or in part must be approved by SCDHEC before implementation.

SWMU No. / AOC Letter	Description of SWMU / AOC	Description of Corrective Action	Description of LUC	Corrective Action Document Selecting LUC
AOC M	Building 1613 Leaking Fuel Line	Groundwater: - In-situ Chemical Oxidation - Long Term Monitoring	- GW Use Restrictions - Land Use Change Notification	(2/2/2009) Revised CMS (8/21/2013)
AOC N	Aircraft Parking Apron - North End	Groundwater: - In-situ Chemical Oxidation - Extraction and Treatment - Long Term Monitoring	- GW Use Restrictions	CMS (3/15/2013)
AOC O	Shallow Lang Syne Investigation	Groundwater: - In-situ Chemical Oxidation - Long Term Monitoring	- GW Use Restrictions	CMS (3/15/2013)
AOC T	Jet Fuel Storage Area – Building 1720	- Confirmatory sampling required at time of site closure	- Land Use Change Notification	RFI (9/20/2013)

APPENDIX G

The Facility Boundary Map

